April 29, 2005

F. Michael Parkowski
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PO Box 598
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Re: Scoping Study Results - Proposal for Comprehensive Assessment of Waste Generation and Recycling by Commercial, Industrial, Agricultural, and Municipal Activities in Delaware

Dear Mike:

This letter report represents DSM Environmental Services, Inc. (DSM) proposed Scope of Work and budget to carry out a comprehensive assessment of waste generation and recycling in Delaware based on the Scoping Study carried out by DSM in April. Our Scoping Study included on-site meetings and telephone calls with key individuals involved in recycling in Delaware as well as a review of existing data, and a literature search.

Background

Over the past several years DSM has completed several studies on recycling in Delaware, including, in chronological order:

- *Evaluation of Enhanced Residential Waste and Recyclables Collection and Processing for New Castle County, RPAC, October 15, 2003*
- *Analysis of the Impact of a Yard Waste Ban On Landfill Quantities and Household Costs, DSWA, September 15, 2004*
- *Estimated Statewide Residential Recycling Rates, DSWA, November 26,2004*

These analyses provide a detailed investigation of residential yard waste and recyclables generation and recycling in Delaware, especially when combined with data that DSWA maintains on its Recycle Delaware program.

DSWA also maintains a database of contact names and activities of commercial and industrial recycling for use in reporting on recycling in DSWA's Annual Report. Each contact is mailed a questionnaire each year asking for quantities of non-residential materials that were recycled in Delaware in the past year. However, DSWA acknowledges that this database is incomplete, that the responses are voluntary, based on willingness to participate, and that double counting can occur.

In 1996 DSWA contracted with SCS Engineers to "*conduct a statewide, four-season waste composition study of wastes disposed at the (four) DSWA solid waste facilities"*[1] This report provided the basis for assessment of the composition of wastes disposed in DSWA landfills, although it is now becoming dated given changes in recycling and packaging in the past ten years.

Finally, Franklin Associates prepared a detailed assessment of Delaware solid waste discards in 2000, which included an assessment of current recycling activities. The Franklin Associates assessment was *"based largely on the use of production data for the materials and products that are ultimately discarded as wastes. Information on the geographic flow of these materials and products was used along with economic and demographic data to estimate quantities of various MSW components in Delaware…This MSW measurement approach assumes that products are purchased, used and then become part of the solid waste stream."* [2] The core component of the Franklin methodology is the use of national production data to estimate per capita generation and recycling rates. The national data were then modified for Delaware based on differences in economic and demographic data for Delaware when compared to the United States. In addition, as part of this analysis Franklin conducted telephone surveys with a number of commercial generators in Delaware.

These reports on recycling activities in Delaware can be compared against DSWA's records of landfill tonnages to estimate what current diversion rates are and what the impact on landfilling would be if these activities were not being carried out. This is especially the case in Delaware because DSWA estimates that 99 percent of solid waste generated in Delaware is disposed of at DSWA landfills (exclusive of Construction and Demolition wastes).[3]

However, DSWA believes that quantities of materials recycled in Delaware are actually significantly greater than has been estimated based on the reports and analyses completed to date. In addition, DSWA is interested in completing an "on-the-ground" validation of the Franklin Associates production and consumption data estimates as well as DSWA's annual post card survey. Therefore DSWA requested that DSM conduct a Scoping Study and then propose a Scope of Work to conduct a thorough assessment of all non-residential recycling occurring in Delaware. The Scoping Study was completed in April, 2005. It included initial interviews with large recycling processors and other knowledgeable individuals in the field in Delaware the week of April 4, 2005 and continued with follow-up telephone and literature research by DSM. The proposed Scope of Work and budget for the detailed assessment is a result of this Scoping Study, and is presented below.

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[1] SCS Engineers, *Project Final Report for the Delaware Solid Waste Authority Waste Characterization Study*, December, 1997.
[2] Franklin Associates, Ltd., *Assessment of Delaware Solid Waste Discards in 2000 and the Potential for Recycling of Materials*, September 2002, p1-1.
[3] Meeting with Thomas Houska, Chief of Administrative Services, DSWA, April 6, 2005.

Definition of Study Boundaries

The boundaries for the study are outlined below. However DSM recognizes that some modifications may be necessary as the study progresses and more information becomes available.

Included Waste Types

This assessment will concentrate on solid wastes only. No gaseous or liquid wastes will be included, although solid residuals from the treatment of liquid and gaseous wastes will be included to the extent that both generation and recycling can be quantified (see below).

Sub-title C (of RCRA) hazardous wastes will be excluded, although the following conditionally exempt waste streams, or "universal wastes" will be included:

- Waste oil;
- Oil filters;
- Household and institutional batteries (i.e. nickel cadmium);
- Lead acid batteries;
- Electronic wastes such as computer monitors, hard drives and related components; and,
- Mercury containing wastes such as fluorescent tubes and electronic switches (to the degree that they can be quantified at the processing stage).

Potential for Off-Site Disposal

Only those solid waste streams which would be disposed off-site, and therefore could potentially be delivered to a DSWA landfill will be included in the assessment. Examples include:

- Dairy manure, which would typically be incorporated back into the soil for its nutrient value, will be excluded, but excess poultry manure, which cannot be incorporated on-site without increasing nutrient releases to ground and surface waters, will be included in the study.
- Wood chips and stumps that are disposed on site will be excluded while wood waste that must be removed from the site will be included.[4]
- Plastic purgings reused in a manufacturing process will be excluded, but purgings sent off-site for processing will in included.

Quantifiable

Only those solid waste streams for which total generation as well as current recycling can be reasonably estimated and quantified will be included in the study. That is, both the denominator (total waste generation) and the numerator (current quantities diverted from

[4] DSM will use the values reported in the existing Yard Waste report completed by DSM for DSWA unless new information that arises as a result of this research indicates a need to update the yard waste estimates.

disposal or recycled) must be quantifiable (with some degree of accuracy) to be included in the assessment. This is important as this will enable the DSWA to recalculate the recycling rate including and excluding certain waste streams.

Import and Export

In all cases the assessment will attempt to exclude solid wastes that are being imported to Delaware for either recycling or disposal. This includes construction and demolition (C&D) wastes that are generated in Pennsylvania or New Jersey but delivered to the Waste Management/DPRI landfill in New Castle County for disposal. This also includes petroleum contaminated soils imported from New Jersey (or other states) for thermal treatment at the Clean Earth facility in Wilmington as well as scrap steel generated outside of Delaware but delivered to CitiSteel for feedstock.

Similarly, the study will include quantities of material generated in Delaware but exported for disposal or for recycling. This will include any solid waste that is hauled out of state for disposal (to the degree it can be tracked and quantified) as well as recycled materials (e.g., paper and cardboard) backhauled or transported from large generators in Delaware directly to out-of-state processors for recycling. Examples of this activity include grocery stores that backhaul cardboard to an out-of-state, central distribution facility for processing, or printing facilities that generate large amounts of scrap paper that broker directly to an out-of-state facility.

Included Waste Categories

Based on the Scoping Study and the definitions of included wastes described above, the following waste categories are expected to be included in the assessment. In some cases, as the assessment advances, it may be necessary to drop or add categories, but this will not occur without first discussing the issue with DSWA.

- Asphalt
- Agricultural wastes
- Brick
- Concrete
- Contaminated soils (with the limitations described in "potential for off-site disposal")
- Construction and Demolition Wastes (including metal, painted and pressure treated woods, unpainted wood, gypsum, asphalt shingles, rubble)
- Commercial Waste, including the following major categories:
    - Office (including paper from government offices, large corporate headquarters such as MBNA and major office complexes)
    - Retail (including corrugated containers from "big box" department stores and small shops)
    - Restaurant (including grease and deposit containers)
    - Automotive (including tires, scrap metal, junk automobiles, salvage)
    - Groceries/Supermarkets

- Fly ash and bottom ash
- Food processing wastes (e.g., poultry processing wastes)
- Municipal sludge (note that DSWA and DSM will have to agree as to whether sludge used for soil cover will be considered recycling or disposal)
- Other wastes (e.g., electronics, carpet, bulky goods, pallets, universal wastes)

It should be noted here that residential waste and recyclables, and yard wastes have previously been quantified, and therefore will not be reevaluated in this assessment unless data are uncovered as part of this assessment that would require revisions to the existing estimates (especially for yard wastes).

Methodology

Approach

This study can be distinguished from previous studies in that it will attempt to quantify existing recycling based on interviews with all the major recyclers in Delaware, and outside of Delaware accepting material from Delaware, as well as surveys of major generators, brokers, and end-users. In each case, DSM will attempt to sum quantities recycled from Delaware generators, while avoiding double counting and the counting of imports of materials from surrounding states.

Recycling will be compared against disposal based on the use of, and manipulation of, landfill records from the three DSWA landfills, and the one private landfill operating in Delaware. Export of wastes from Delaware will be quantified, and imports of waste from surrounding states will be discounted based on interviews and records associated with the private landfill (DSWA landfills are prohibited from accepting out-of-state wastes).

Calculating the Denominator

Review and Tabulate Landfill Data

DSWA has provided DSM with landfill records for fiscal year 2004 and 2005. Data have been sorted based on type of waste reported at the scale house (e.g., C&D, sludge, MSW). However, DSWA does not keep a record of whether wastes are residential or commercial. The closest method for assessing this, which DSWA has done for DSM is to assume that rear loading packer trucks are residential waste and front loading and container trucks are commercial waste. DSM will use these data plus data from the Waste Management (DRPI) landfill in New Castle to quantify in-state disposal, by type.[5]

Because of the importance of DSWA landfill data to quantification of the denominator of the recycling equation for commercial and industrial wastes, and because DSWA does not maintain records on how much of the waste is actually “residential” versus

[5] DSM assumes that DNREC will provide DSM with data on deliveries to the DRPI landfill based on reports filed at DNREC.

"commercial" or "industrial" wastes,[6] DSM will augment the data supplied by DSWA with on-site surveys of deliveries to each of the three DSWA landfills (Cherry Island, Jones Crossing and Sandtown) and the Pine Tree Corners Transfer Station. These surveys will consist of asking the driver of a random sample of rear loading, front loading and roll-off trucks to estimate what percent of the load is residential versus commercial or industrial. The results of this sample will be used to further refine the data supplied by DSWA which lists deliveries by vehicle type.

DSM believes that surveys of truck drivers entering the DSWA facilities is an essential component of the overall analysis because a reasonably accurate record of residential versus commercial and industrial wastes is key to defining the denominator for subsequent comparison against recycling quantities. DSM has conducted similar surveys before and has found that most drivers are willing and able to provide reasonable estimates, or, if the waste is all from one category to tell an enumerator that information. The survey is also relatively non-intrusive because the trucks are all stopping at the scale house in any case and the survey can be conducted quickly at that time.

DSM will also contact haulers who have not entered into an agreement with DSWA for use of DSWA landfills (e.g., Republic Industries) to attempt to quantify out-of –state waste disposal of Delaware wastes. DSM will also attempt to verify that no other disposal facilities or methods are used so that this can be definitively stated in the report. If other facilities are identified, DSM will attempt to quantify this. For example, DSM will try to verify if any C&D waste generated in other parts of Delaware is leaving the State.

Landfill data will be summed by type (residential, commercial, industrial, and special wastes) and will represent the overall denominator of the recycling equation. Recycling data (see below) will then be collected and compared against the data on landfill disposal to calculate recycling rates by broad generator category and by material types.

Survey Generators for Wastes Not Disposed At Landfills

Some of the waste categories listed above (e.g., manures, poultry wastes, asphalt, concrete, contaminated soils) are not typically disposed at DSWA or private landfills, but are disposed in other locations. In these cases it will be necessary for DSM to conduct surveys of generators to determine the total quantity of waste generated, what percent is used/disposed on-site (and therefore should not be counted), and what percent is disposed off-site, or recycled.

[6] Some rear load waste is commercial waste from dumpsters, and some front load and container waste is actually residential waste from apartments and condominiums.

Calculating the Numerator

Survey Processors, Brokers and End Users

DSM will survey processors, end users and brokers (to the degree DSM can gain participation from brokers), to confirm the quantity and flow of materials in the recycling process from Delaware generator to end user and to ensure that the majority of each type of material is counted and that double counting does not occur.

Metal

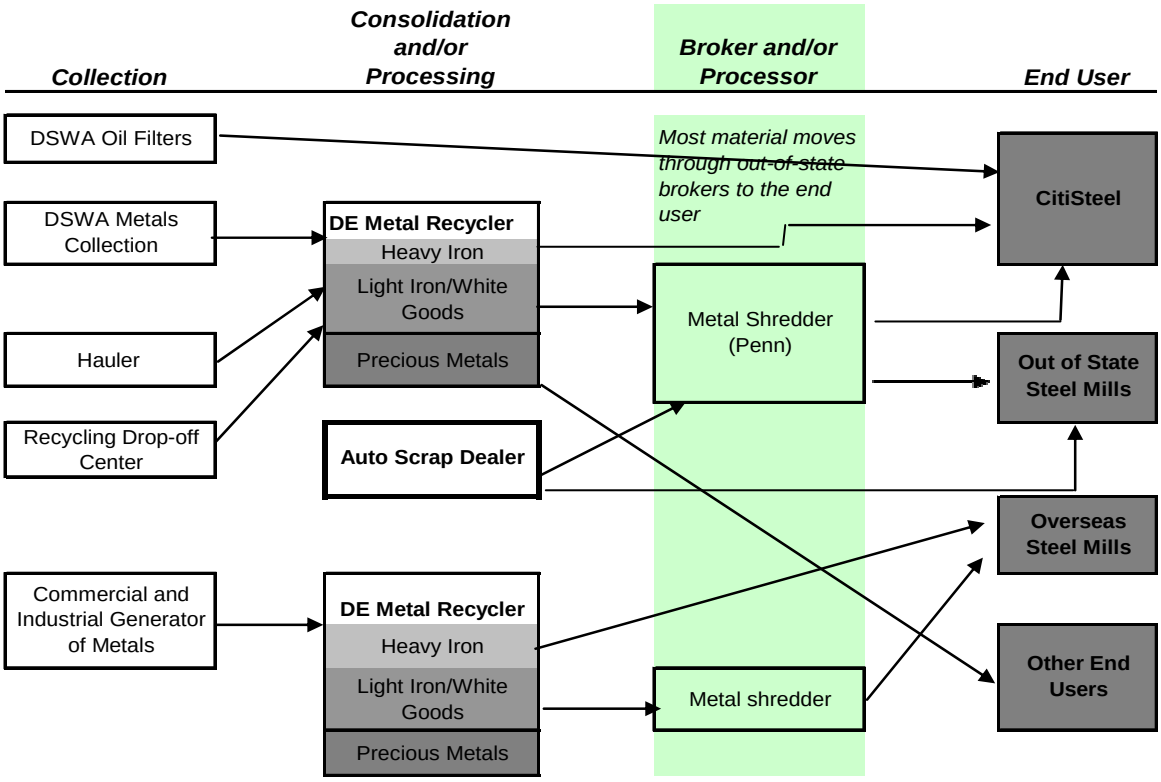
DSM has met with the two largest scrap metal dealers in Delaware (Diamond State Recycling Corp. and Penn-Del Metal Recycling Corp.), as well as CitiSteel USA, which purchases most of the metal scrap from these two dealers. However CitiSteel, located in close proximity to both of these scrap metal dealers, goes through an out-of-state broker to purchase the scrap metal which is then delivered directly (in most cases) to CitiSteel by these two scrap metal dealers. Therefore, in the case of metal, it has been necessary to request data from CitiSteel directly as to how much scrap metal generated in Delaware is consumed at the CitiSteel facility.

Not all scrap metal generated in Delaware goes to CitiSteel. Some metals are separated at processors such as Diamond State Recycling, and then sent out of state for shredding, before being sent back to CitiSteel for end use. Finally, some metals, such as autos, may leave the state for further processing before being sent to other end users domestically (but out-of-state) and abroad.

It is necessary to understand the flow of metals and processing steps and locations for metal generated in Delaware to fully count metals recycling and to ensure there is no double counting. Figure 1, below, illustrates the complexity of the recycling process for scrap metals and shows the potential for double counting materials, as well as for missing materials that are generated in Delaware but recycled out-of-state.

DSM will survey metals recyclers (and brokers to the degree they can be identified) at several different points in the system to ensure that all metals separated for recycling are identified, and that the flow of metals is confirmed so that double counting does not occur.

MATERIALS FLOW: Example of Potential Steps for Scrap Metal Recycling



Paper

Based on a review of the DSWA recycling database DSM believes it is likely that significantly more paper is being recycled from non-residential generators then is being reported to DSWA in the voluntary surveys. As with metal, understanding the flow of paper will be necessary to fully count paper recycling in Delaware. DSM believes paper brokers and generators will require the largest effort because paper plays such an important role in recycling and because of the potential role of out-of-state brokers and end-users in the purchase of recyclable paper generated in Delaware. For this reason, it will be necessary to survey large generators of paper to identify both in-state and out-of-state brokers and end users to account for export of Delaware material that is not processed instate.

For example Rapid Recycling, located in New Castle, handles paper from printers in Delaware as well as brokers some material for another paper recycler. To avoid double counting, while accounting for all waste paper actually generated and recycled in Delaware, it will be necessary to assure that data from in-state processors includes the flow and deliveries of paper and that data from brokers includes identification of the sources of paper. DSM will confidentially track this information to document the flow of paper from generation to end use. This will include surveys of large generators such as JP Morgan and MBNA as well as paper recyclers such as Able Recycling, BFI and Confi-Shred (Waste Management), some of which will require on-site interviews.

DSM assumes that to the extent possible, DSWA will use what ever influence they have with regional paper brokers to provide DSM with entries to these facilities. DSM will also use contacts that it has in the industry, and contacts developed through the survey of generators to facilitate access to paper brokers and processors.

Other Materials

Brokers for other materials (e.g., plastic, industrial scrap, electronic scrap, aggregate) will also be surveyed, with the goal to quantify the end use, and avoid double counting. Again it will be necessary to survey enough large generators of each type of material to identify all brokers operating in Delaware. Whenever possible, DSM will contact trade associations to attempt to gain buy-in and credibility for the surveys, and to develop contact names.

Agricultural and Food Processing Wastes

During the scoping study DSM met with the Nutrient Management Commission of the Department of Agriculture. Based on that meeting it is clear that much of the data on off-site management of manures can be obtained through the Department of Agriculture and that much of the data on food processing wastes can be obtained from a few large generators through on-site surveys conducted by DSM. This may include Mountaire Corporation and Purdue - the major poultry processors in the state.

Asphalt

DSM contacted the Materials Research Department at the Delaware Department of Transportation, which referred us to the Delaware Asphalt Paving Association, representing a majority of the major paving contractors. DSM assumes that an on-site interview with the Delaware Asphalt Paving Association, with follow-up calls to asphalt paving contractors will be sufficient to determine and quantify the amount of asphalt paving recycled in Delaware. There may be some estimation necessary using average volume to weight conversions. DSM will also survey Diamond Materials, who reports recycling 13,000 tons of asphalt and 110,000 tons of concrete last year.

Brick and Concrete

DSM met with Wilmington Recycling, operated by a consortium of six construction companies, which crushes and screens concrete for reuse. Based on this meeting it is clear that additional surveys of construction companies will be necessary to determine the extent to which concrete is disposed on site, disposed off-site (limited because of weight and cost), or recycled.

For example, DSM has been told that Tilcon processes crushed concrete that is used as a stone base in roads, however Tilcon did not report in last year's DSWA survey. DSM will attempt to survey Tilcon as well as others large recyclers such as Coker and

Diamond Materials. In addition, DSM will survey large generators who are reported to recycle large quantities of concrete such as George and Lynch, Kershaw Construction and Merit, to confirm quantities and ensure double counting is not occurring.

For brick it will be necessary to determine how much salvage and reuse is occurring in Delaware versus disposed off-site which will also require surveys of construction companies as well as demolition contractors.

Contaminated Soils

Based on an interview with the General Manager of Clean Earth of New Castle, it is likely that the majority of information on reuse of contaminated soils can be obtained through Clean Earth, including data on export and import of material. One area that will require clarification with DSWA as the project goes forward is whether on-site remediation should be considered recycling, or not accounted for. Based on the definition of the boundaries of the study defined above, this scope assumes that this material would not leave the site, and therefore should not be accounted for.

Construction and Demolition Wastes

This is an area that will require a more significant effort to quantify generation, in-state and out-of-state disposal, and recycling. This is because much of the C&D waste, especially in New Castle County, is disposed at a private landfill (DRPI- a subsidiary of Waste Management), and because DSWA does not have the same types of landfill agreements with C&D contractors as with waste haulers, thus allowing for out-of-state disposal, which must be quantified.

Surveys of construction and demolition contractors will therefore be necessary to quantify how much material is being generated, disposed in-state, and disposed out-of-state, and to quantify how much material is being recycled (both in-state and out-of-state) as well as salvaged for reuse. Given the size of the construction industry in Delaware, this will require a significant on-the-ground effort, especially because construction contractors are typically difficult to contact during the day when they are at job sites.

These surveys will also have to be compared with surveys of processors and brokers to avoid double counting (e.g., stainless steel sinks sold as scrap to metals dealers or concrete processed as described above). DSM will also survey IKO, which recycles asphalt shingles in Wilmington, to determine the quantities and sources of materials recycled.. This may help to identify construction companies that are more likely to be engaged in recycling activity.

In addition, DSM will request data directly from DNREC concerning DRPI/ Waste Management landfill quantities in as much detail as DNREC can provide as to the quantity, composition and source of landfilled materials.

Commercial Wastes

It can be assumed that virtually all commercial wastes are ending up at DSWA landfills because of the hauler agreements that DSWA has. In addition, the majority of paper (the largest single recycled material from commercial generators) is being managed by brokers. However, some paper is being directly back-hauled to out-of-state warehouses, and other paper is being sold directly to out-of-state brokers. Therefore it will be necessary to survey large generators, brokers, and end-users to quantify this important waste generation and recycling category.

This is especially important because commercial waste generation (along with C&D waste) is growing with Delaware's growing population while industrial wastes from manufacturing are declining. As Table 3 from DSM's original, November 9 proposal illustrates, four of the seven largest employment sectors in Delaware are now likely to be significant paper generators.

Table 3 (reprinted) Largest 7 industries represents 68% of employment

Total	**377,277**	**100.00%**
Retail Trade	51,680	13.70%
Finance & insurance	44,417	11.77%
Health care & social assistance	42,978	11.39%
Manufacturing	41,846	11.09%
Administrative & support	29,887	7.92%
Accommodation & foodservices	26,522	7.03%
Construction	22,149	5.87%

For this reason, DSM is proposing to expend considerable effort to further quantify recycling activity in these sectors through the use of surveys at the generator level (to identify brokers and estimate quantities) as well as at the broker/processor level.

Generator surveys will also allow DSM to determine how much backhauling of corrugated, especially, is occurring in Delaware. That is, it is likely that some supermarkets and box stores (department stores) backhaul cardboard and shrink wrap to central distribution facilities (out-of-state in some cases) for consolidation for recycling. DSM will survey major supermarket chains and box stores to obtain quantities of materials recycled and the flow of materials. This includes supermarket chains such as Food Lion, Albertson's/Acme Markets, Shore Stop, Super Fresh Foods, Super G and box stores such as WalMart and Kmart.

DSM believes an important first step will be to gain endorsement from state organizations such as the Chamber of Commerce and the Delaware Retail Association. With their endorsement, it is likely that DSM will be more apt to gain survey cooperation and strong participation.

DSM recognizes that Franklin Associates conducted telephone surveys of some of these same generators. However, we believe that it will be necessary to expand this survey to on-site surveys in some cases as well as conduct additional telephone surveys to verify these data and the flow of materials. DSM assumes that the background data developed by Franklin Associates in 2002 will be made available to DSM by DSWA during the study to avoid duplication of effort.

In all cases it is DSM's intent to attempt to derive recycling quantities for each large generator category from at least two methodologies to confirm the reasonableness of the estimates.

Restaurant and Cafeteria Grease Generation

DSM believes that surveys of a few large rendering companies (Mopack and Dover Products) will be sufficient to quantify the extent of grease and animal carcass recycling occurring in Delaware.

Automotive

Quantification of automotive wastes and materials recycled including tires, batteries, waste oil, oil filters, salvage, and junk auto baling/shredding will be completed by surveying the largest recyclers and brokers of this material. In the case of waste oil and filters, DSWA will be able to provide the data without significant effort on the part of DSM. And information on oil filters has already been verified by DSM's meeting with CitiSteel.

The primary survey effort will probably be to quantify salvage of vehicle parts as described in the section on metals. In addition, DSM will survey Magnus to verify the tire recycling quantities and to determine whether additional tire recycling/reuse activities are in place as well as Interstate Battery and the other large battery recyclers. The purpose of duplicating the survey effort already undertaken by DSWA is to identify other recyclers in the business, verify quantities reported and confirm flow of materials to eliminate double counting.

Fly Ash and Bottom Ash

Interviews with DNREC and DSWA will form the basis for quantification of this waste stream, with potentially some follow-up interviews with generators such as NRG Energy to quantify any off-site reuse occurring.

Municipal Sludge

Again, interviews with DNREC staff will be used as the basis for quantification of generation, recycling and disposal.

Industrial Wastes

DSM intends to conduct on-site surveys of the largest industrial plants in Delaware to assess total generation, recycle, and off-site disposal. These facilities will be identified through contacts with the Chemical Industry Association[7], use of state employment data, and use of the Toxic Release Inventory data. In addition, DSM has already contacted DNREC to obtain a listing of facilities that hold beneficial use permits.

DSM assumes that at a minimum, on-site interviews with DuPont, Astra Zeneca, General Motors Corp (Saturn), Daimler Chrysler, Connective (Pepco Holdings), Dade Behring, Pemcore, and Playtex Products will be necessary.

Other Waste Streams

There are a variety of other waste streams that are recycled, although probably with limited impact on the overall recycling rate from a tonnage basis. Some of the largest are described below.

Bottle Bill Material

DSM will track recycling of bottle bill material through contacts with distributors and brokers and recyclers. This includes an on-site or telephone survey with BGWG who collect and process glass for three of the major distributors in Delaware.

Electronics

DSM will survey electronics recyclers such as CDM of Baltimore, Electronicycle (PA) and Elemental to obtain estimates of the amount of electronic material that they process from Delaware. In addition, during the surveys of industry and large paper generators, DSM will enquire as to their method for managing waste electronics in order to identify other methods used to recycle and reuse electronics generated in Delaware.

Food Waste

While DSM has been told that no or very little food waste recycling is occurring in Delaware, DSM will confirm this when surveying supermarkets and haulers as well as other potentially large generators of food waste.

Plastics

Quantification of plastic recycling will be through a combination of surveys of brokers, as well as surveys of major generators. This will include contact with the Chrysler and General Motors plants as well as F&P International who is believed to recycle expanded polystyrene (EPS), polystyrene cups and clean food service polystyrene.

[7] DSM has spoken with Bill Wood who has agreed to promote the survey effort to member companies. DSM will provide Mr. Wood with a written request detailing the survey method and participation request.

Paints

There is a paint recycling operation in Delaware operated by PPG. DSM will contact PPG to determine quantities and disposition.

Pallets

Pallets are typically generated and reused/recycled in large quantities in many industrial, warehouse, and commercial activities. DSM will quantify pallet recycling through a survey of major pallet recyclers as well as major manufacturers that generate pallets.

Textiles

DSM will quantify textile recovery through telephone surveys with resale organizations such as the Goodwill, as well as through the major textile brokers purchasing textiles from Delaware.

Carpets

Carpet generation and recycling has become more important over the past several years due to efforts of carpet manufacturers to increase recycling of this heavy material. DSM will attempt to verify and quantify carpet recycling in Delaware to the extent that it is occurring.

Reuse Activities

It has been DSM's experience in other states that quantifying reuse activities is difficult because of the dispersed nature of reuse (e.g., yard sales, one-time community events), and the lack of records on quantities. However DSM will attempt, to the extent possible, to survey reuse businesses (e.g., used book, clothing and furniture stores) to estimate the extent of reuse activity in Delaware, and then attempt to quantify this activity in terms of tons reused per year.

At the beginning of the analysis it is not possible to determine if the resulting data on reuse activities will be sufficiently credible to include in the analysis. As such, DSM will present the methodology and results as it develops to DSWA for ultimate determination as to inclusion in the analysis.

On-Going Meetings with DSWA

DSM assumes that on-going progress meetings with DSWA can and will occur when DSM is in Delaware conducting on-site surveys. These will be critical to identify any missing information, to clarify data, to determine alternative methods to gain survey participation (if participation in certain surveys are lacking) and to obtain agreement on

the definition of recycling for some unusual methods of waste management that DSM may encounter during the course of the survey.

Timeline

DSM believes that the bulk of the surveys can be carried out over a three to four month period upon authorization to proceed. Given the timing of this project it is likely that summer may slow the availability of people that need to be interviewed. If this is becoming a problem DSM will notify DSWA and provide an up-date on the time necessary to complete the surveys.

Draft and Final Report

Near the completion of the surveys, DSM will prepare a draft report for review and comment by DSWA. It is anticipated that this draft report would be available for review by DSWA in August or early September. DSM assumes that it will be necessary to meet with DSWA once DSWA has completed their review to discuss the draft report and address any concerns that arise. Once the review is complete DSM will address any follow-up issues that remain outstanding, and prepare the final report.

The final report will be constructed so that each material category stands by itself, allowing for calculation of recycling rates based on which ever categories the reader chooses to include or exclude in the rate. In addition, the report will review waste streams recycled and disposed and identify, where applicable, where opportunity lies for increased recycling. This may be helpful for DSWA in designing programs for the future. In addition, DSM will make the recycling database and contact names available to DSWA to assist with future calculations of recycling rates.

Proposed Budget

DSM proposes to conduct the analysis presented above for a not-to-exceed cost of $85,000. A detailed budget, by task is attached to this proposed Scope of Work so that DSWA can better understand where DSM anticipates expending its effort.

DSM recognizes that in some cases the scope may need to be changed as the project proceeds. If DSM believes that significant additional effort is necessary in some category, and reduced efforts in other areas are insufficient to cover this additional cost, then DSM will notify DSWA and request agreement on a proposed change to the scope and/or budget. However, due to the efforts expended during the Scoping Study, DSM is relatively confident that the project can be undertaken within the budget specified.

Closing

In closing, DSM is excited about the opportunity to conduct this important study for DSWA. To the best of DSM's knowledge, this would be groundbreaking work which would be beneficial not only to DWSA, and to others in Delaware, but also to other states

and waste management entities attempting to better define recycling activities. The size of Delaware, and the fact that the vast majority of all wastes are currently going to DSWA facilities makes this study feasible, and should improve on the accuracy of the results.

If you have any questions about the scope or the proposed budget, please do not hesitate to contact me.

Sincerely,

Ted Siegler
President